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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,386

04/30/2004

Ramesh NAGARAJAN

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EXAMINER

MOTSINGER, SEAN T

ART UNIT

PAPER NUMBER

2624

NOTIFICATION DATE

DELIVERY MODE

05/07/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/709,386	Applicant(s) NAGARAJAN ET AL.	
	Examiner SEAN MOTSINGER	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/7/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,9-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Applicants Arguments/Amendments

1. Applicants arguments/amendments filed on 4/7/2008 have been entered and made of record.
2. Regarding applicant's description of the interview on March 11 2008, applicant makes remarks about several alleged agreements made in said interview; the examiner has a different recollection of the events of the interview. While the examiner did indicate a measured amount of openness to only one of applicant arguments (the 112 first paragraph rejection withdrawn in response to applicants arguments as discussed below), the examiner does not recollect formally agreeing to this or any argument at the time of the interview. Examiner recollects only general discussion about arguments presented by applicant (a brief description of which is included in the appendix to the interview summary); the examiner recollects presenting his opinion on said arguments and that no agreement about said arguments was reached. The examiner further notes, that the examiner made no indication of any agreement being reached at said interview, as clearly indicated on the interview summary form.
3. Regarding the applicants arguments with respect to the objection to the drawings, the examiner has carefully reviewed applicant's arguments, but they are not found persuasive. While applicant is correct that the claim no longer recites plurality of planes, the "segmenting the high spatial frequency grey scale image data

into a plurality of blocks” now recited is not shown in any of the figures. Furthermore it is unclear where support for “segmenting the high spatial frequency grey scale image data into a plurality of blocks” can be found in the specification. The examiner only finds support for splitting the grey scale image into a plurality of blocks not specifically the high spatial frequency data. Accordingly a 112 first paragraph written description rejection has been included below.

4. Regarding applicants arguments with respect to the rejections under 35 U.S.C. 112 second paragraph, applicants arguments have been considered and found persuasive. The amendments to the claims have overcome the issues in the rejection.
5. Regarding applicants arguments with respect to the rejections under 35 U.S.C. 112 first paragraph. Applicants arguments have been considered and are found persuasive. While the examiner has seen no evidence that CCIT can compress grey level data, JBIG can compress grey level data; therefore the claims are enabled.
6. Regarding applicants arguments with respect to the prior art, applicant’s arguments have been fully considered but are not found to be persuasive. Applicant asserts that adding the word “source” to the claim overcomes the prior art because the data undithered (converted from binary to grey scale) is not “source” data however there is not definition of “source” data in the claim. The data to which the

undithering is applied clearly must have a source, and therefore should be considered source data. On a side note applicant states "Noh teaches converting a higher resolution grayscale image to a lower resolution grayscale image or to a binary image." The examiner notes this is a misunderstanding of the reference Noh converts a high resolution grey scale image into a lower resolution grayscale via converting the image into binary then converting it back into grayscale.

Objections to the Drawings

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "segmenting the high spatial frequency grey scale image data into a plurality of blocks" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be

necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Rejections Under 35 U.S.C. 112 First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 2 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 2 and 10 recite "segmenting the high spatial frequency grey scale image data into a plurality of blocks" the examiner finds no evidence of this step being preformed in applicant's specification. The specification only recites that the grey level image may be divided

into a plurality of blocks. It makes no reference to the high spatial frequency grey scale image data being segmented into a plurality of blocks.

Rejections Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view or Fan et al US 6400,844.
11. Re claim 1 Noh et al discloses A method for reformatting binary image data (bi – level dithered image column 2 lines 25), comprising: converting source (note the binary image data has a source) binary image data into grayscale image data (undither to create “multi-level image” column 2 lines 25-50);
12. Noh does not disclose segmenting gray scale image data into a first plane having high spatial frequency gray scale image data and a second plane having low spatial frequency gray scale image data; and separately compressing the high spatial frequency gray scale image data in the first plane and the low spatial frequency gray scale image data in the second plane.

13. Fan et al discloses segmenting gray scale image data into a first plane (upper plane column 5 lines 5-15) having high spatial frequency gray scale image data (dark sides of edges see abstract) and a second plane (lower plane column 5 lines 5-15) having low spatial frequency gray scale image data (smooth portions see abstract); and separately compressing (column 5 lines 24-30 note each can be compressed differently) the high spatial frequency gray scale image data in the first plane and the low spatial frequency gray scale image data in the second plane.
14. Re claim 9, claim 9 is claimed as any apparatus configured to perform the method of claim 1 (see rejection for claim 1.)
15. Claims 4, and 12-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844.
16. Re claim 4 Noh and Fan disclose all of the elements of claim 1, they do not disclose a computer readable storage medium that stores a program of that embodies the method of claim 1. However examiner is take official notice that it is well known to implement such methods in computer code and store them on a computer readable medium. The advantage would be to be able to transfer the program. Therefore it would have been obvious to one of ordinary skill in the art to

combine Noh, Fan and common knowledge in the art to reach the aforementioned advantage.

17. Re claim 12 Noh and fan disclose all of the elements of claim 9 the do not disclose a marking device incorporating the apparatus of claim 9. However examiner is taking a official notice that marking devices are notoriously well known. The advantage to combine would to improve the marking device such that "economies in the resources used to store and transmit image data can be achieved by compression"
18. Re claim 13 Noh and fan disclose all of the elements of claim 9 the do not disclose a photocopier incorporating the apparatus of claim 9. However examiner is taking a official notice that photocopiers are notoriously well known. The advantage to combine would to improve the photocopier such that "economies in the resources used to store and transmit image data can be achieved by compression"
19. Re claim 14 Noh and fan disclose all of the elements of claim 9 the do not disclose a document scanner incorporating the apparatus of claim 9. However examiner is taking a official notice that document scanners are notoriously well known. The advantage to combine would to improve the document scanner such that "economies in the resources used to store and transmit image data can be achieved by compression"

20. Claims 2, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844 in further view of Lin et al US 2002/0076103
21. Re claim 2 Fan and Noh disclose all the elements of claim 1 they do not disclose wherein segmenting gray scale image data includes segmenting the high spatial frequency gray scale image data into a plurality of blocks based on gray scale levels of the high spatial frequency gray scale image data.
22. Lin discloses wherein segmenting gray scale image data includes segmenting the high spatial frequency gray scale image data into a plurality of blocks based on gray scale levels of the high spatial frequency gray scale image data (see paragraph 67 note the image is further segmented into partial planes which could be considered blocks) The motivation to combine is so that the objections can be “readily extracted” (see paragraph 67). Therefore it would have been obvious to one of ordinary skill at the time of the invention to combine Fan Noh and Lin to reach the aforementioned advantage.
23. Re claim 10, claim 10 is claimed as any apparatus configured to perform the method of claim 2 (see rejection for claim 2.)

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24. Claims 3, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844 in further view of Kodidis, Eleftherios et al. "Nonlinear Adaptive Filters For Speckle Suppression in Ultrasonic Images," Signal Processing, Signal Processing v 52 n3 August 1996, pp. 357-372.
25. Re claim 3 Noh and Fan disclose all of the elements of claim 1 they do not disclose enhancing the low spatial frequency gray scale image data in the second plane. Kodidis discloses a method of speckle reduction (See abstract, which is a method for enhancing low spatial frequency data). The motivation to combine is to suppress speckle (see abstract).
26. Re claim 11, claim 11 is claimed as any apparatus configured to perform the method of claim 3 (see rejection for claim 3.)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN MOTSINGER whose telephone number is (571)270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571)272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

Motsinger
4/29/2008